



Micro-Credentials in the Future European Policy Landscape

Digital Credentials Masterclass
Interactive Conference Magazine

Technical Fiche

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Introduction

To succeed in finding suitable employment – and match an individual’s niche profile to that of a job vacancy –, today’s lifelong learners want their knowledge, skills and competences globally understood and recognised. These skills and competences can be acquired from a variety of sources, including formal and non-formal education, informal learning activities and work experiences.

MicroHE was built on the conviction that micro-credentialing in Higher Education can be the key to the successful transformation of universities’ service offering, to attract more learners and provide them with high quality micro-credentials that are portable, modular and stackable, and provide micro-credential holders with advantages and benefits that traditional degrees are often too rigid and inflexible to supply.

The project produced a series of highly influential outputs, including the MicroHE meta-data standard, that has become an important building block of the new Europass data model, Credentify, the first European issuer of blockchain-secured stackable ECTS credentials, as well as a Delphi survey to forecast the potential impacts of continued HE modularisation on HE Institutions.

In parallel with the project implementation the overall European Policy Landscape has been rapidly changing as well, echoing the MicroHE sentiments and calls for action. The new Europass, the European Commission’s recently assembled Micro-Credentials Consultation Group and the MICROBOL (Micro-credentials linked to the Bologna key commitments) project are exemplary initiatives that speak for themselves.





The Digital Credentials Masterclass, held in October 2019, was one of the unique highlights of the MicroHE project. It gathered a carefully selected group of experts, representing a wide range of roles and practices, who had complementary interests in the credentialisation business. The participants had affiliations to prestigious Higher Education Institutions, national and European policy makers, quality assurance and recognition agents, career management platforms and technology developers. Together, these experts took part in a series of thematic sessions, investigating the potential of micro-credentials to transform the European Higher Education landscape, from the perspectives of policy, technology, pedagogy and institutional strategy.

The aim of this 1.5 day foresight event was to collectively learn from the experts representing the above mentioned four fields, using their input to fuel discussions on the future development of micro-credentialing in the coming 5 to 10 years. Key aspects addressed by the presentations and subsequent thematic discussions included access to education, development and information on learning opportunities, programme delivery, the role of technology and data, quality assurance, and recognition or credit transfer and accumulation.

This interactive Conference Magazine is providing a concise extract of the Masterclass highlights, while at the same time it also gives the readers access to the full presentations of all speakers (both the video recordings and the slides) and links to more information about the showcased initiatives.





01 Opening Session



Raimund Hudak

DHBW

Davor Orlic

Opening Up Slovenia

Welcome from the Hosts

[Watch the presentation](#)

Raimund Hudak

In his welcoming speech, Mr Hudak drew the audience's attention to the strategic triangle for higher education institutions, with the student (the prospective employee) at the top, and the institution and the world of work at the other vertices. With micro-credentials, learning can be personalized, which is attractive for students as well as for employers. We will see mass-customization in higher education.

Students will build their own portfolio of stacked credentials, and they will expect their university to recognize micro-credentials as credits for their degree. The student's perspective is quite simple: with a portfolio of specialized micro-credentials from the best universities in the world, and a solid Bachelor's or Master's degree education, they can increase their value on the labour market.

Davor Irlic

This Digital Credentials Masterclass is connected with the Opening Up Slovenia initiative, which is trying to understand whether and how Slovenia could be a test-bed for innovations in education on any level: policy, technology, curriculum, delivery, etc.

“The world of work increasingly demands the “T-shaped professional”: graduates with an in-depth knowledge in one specific field, and at the same time with the ability to act successfully across disciplines.”



Anthony F. Camilleri

Knowledge Innovation Centre

Micro-Credentials 101: What are they and why should we care?

[Watch the
presentation](#)

Mr Camilleri argued that technology is driving radical change in employment and societies, at an increasing rate. According to a study done by McKinsey, 14% of workers will need to switch occupational categories in the next 15 years. On the one hand, occupational sectors increasingly focus on skills rather than qualifications or professions. IT and Data processing skills as well as team work and self management skills are becoming more important. Degrees are losing value as a currency for employment. A study done by Accenture in the US showed that for employers, relevant work experience and certifications are much more important factors than a four-year degree when hiring potential employees. On the other hand, many professions have upgraded to requiring degrees where before they didn't require any.

Lifelong learning is increasingly the norm. Training and development is the most valued perk for millennials when seeking employment. There is an enormous thirst for knowledge even after graduation. Because of that, we are seeing an entire ecosystem around providing these smaller portions of learning: MOOCs and micro-credentials just keep growing and growing. Employers are also beginning to take note of this. The story of the last few years has been the story of the rise of high quality micro-credentials. For higher education institutions, micro-credentials require an educational moonshot of our times. Moving from a fordist model of education to mass-customized degrees is unprecedented. Do the calculus: 10,000 universities globally, offering 500 micro-credential courses each, that's 5 million micro-credentials, amounting to 26 trillion possible combinations of 5-credential packages for a stackable degree!

An example helps to illustrate the challenges facing HEIs: Let's say John quit his job as a lab technician to become a sustainable energy investor. He uses micro-credentials to prepare for his new profession. With micro-credentials, he can re-qualify specifically for his new job needs, combining micro-credentials in investing and microfinance from the University of Barcelona, in wind-power engineering from the University of Edinburgh, in climate modelling from Stanford University, in circular economy policies from the University of Stockholm and in solar power engineering from the University of Malta. Taken together, these courses could prepare John very well for his new career. However, to have value, this combination of micro-credentials has to be recognised as a suitable qualification by his future employer.

“The European Standards and Guidelines for Quality Assurance (ESG 2015) call on Higher Education Institutions to enable flexible learning pathways, use different modes of delivery and encourage a sense of autonomy in learners. Micro-credentials can do just that. A micro-credential is a subunit of a credential that can be stacked into a larger credential. A micro-credential typically is equivalent to a workload of between 2 and 30 ECTS.”





Henri Pirkkalainen

Tampere University

Introduction to the Day and Methodology

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[Download the Slide Deck](#)

Mr Pirkkalainen explained the forecasting methodology. The participants were divided into four groups that stayed together for all four forecasting sessions that were planned in between the presentations. Each session focused on one aspect of micro-credentials. Session 1 was entitled “Technology powering the future of micro-credentials”, session 2 focused on “Micro-Credentials in the Future European Policy Landscape”, session 3 highlighted the “Impact of Micro-Credentials on Institutional Processes and Governance”, and session 4 concluded with a look on the “Impact of micro-credentials on new learner paradigms.”

Each group was asked to formulate impact statements from each of the sessions in a predefined format: “X enables adoption of micro-credentials in higher education via Y,” or “X enables the impact of micro-credentials on Y.” The aim was to identify the potential impact of micro-credentials and modularization of Higher Education in 5-7 years from now. The assumption was that the student in higher education would by then have the flexibility to combine credentials from different sources to form a degree.



01
02

**Technology
powering the
future of Micro-
credentials**



Janina van Hees

Project manager educational innovation with ICT, SURF

National approach to open badges in higher education

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Ms van Hees presented joint national effort from the Netherlands that wants to achieve recognisability, stackability and meaningfulness for micro-credentials, both accredited and non-accredited. Together with 18 education institutions, SURF has conducted a Proof-of-Concept on the use of open badges in Higher Education. SURF is an association of Dutch education and research institutions in which its members join forces to drive innovation together. In this project, SURF is developing an infrastructure, which all Dutch HEI may use to issue open badges, while the participating institutions have defined policies on micro-credentials, open badges and unbundling in higher education. The aim was to gain experience on how the use of open badges could enable flexible learning pathways and to demonstrate how this process could work. Ms van Hees shared with the audience the following lessons learned:

Badge Issuer (Educational Institution)

- Badge strategy: determine the status that the badge has within the education system and how it relates to other badges.
- Badge governance: who may issue badges, when may they be issued, and to whom?
- Badges for micro-credentials require a vision on flexible education.

Badge Earner (Student)

- Possibilities offered by badges not yet known.
- Uploading badges to social media takes time and effort, and they are not displayed prominently.
- Managing badges is still an issue to be resolved.



Infrastructure

- Important focus is storage of edubadges.
- Standardisation: alignment required on subject-specific metadata and value system.
- Integration of the edubadge features in the digital learning environment and student information systems (SIS) is imperative.
- Important focus is on guaranteeing the authenticity of the badge's content, the awarding party and the badge earner.
- A persistent ID to manage the badges is a prerequisite (e-mail address is not sufficient).

“If we want to let students register for modules instead of complete programmes, then we need:

- **A database of educational modules**
- **A national persistent student identity**
- **A national registry of received microcredentials**
- **A joint framework that ensures comparability and avoids proliferation**
- **A visible distinction between badges for formal/accredited education (ECTS, EQF, quality assurance) and badges for non-formal/ non-accredited education (outside the quality assurance framework)”**



Chiara Carlino

Consultant for Universities, CINECA

Technology powering the future of micro-credentials: a view on Blockchain and Open Badges for Higher Education

[Watch the presentation](#)

Ms Carlino took the audience on a journey through the Italian digital credentialing landscape. CINECA is a consortium of Italian universities that provides information systems and services to its members. CINECA is the coordinator of the .Bestr project, a digital credentialing platform based on open badges. It was started in 2015. It is closely integrated into student information and other university IT systems and aims to provide visibility and recognition to competencies acquired in around the higher education system. There are plans to integrate new technologies (such as Blockcerts) and standards (such as the European Digital Credentials Infrastructure) into the .Bestr platform in the future. The efforts of the tech community and of pioneering universities are currently focused on credentialing learning experiences such as abroad experiences, extracurricular competencies, in-company trainings and language proficiency to make the credentials both human- and machine-readable so that they can be valued and potentially recognized as ECTS credits.

The University of Milan-Bicocca is a member of the Digital Credentials Consortium that is led by

the MIT with the aim of building an infrastructure for digital academic credentials based on public key infrastructures, public ledgers, and blockchains. Its aim is to support the education systems of the future, capable of guaranteeing portability and verifiability of university degrees.

“Challenges for open badges and blockchain-enabled credentials:

- **we need accepted standards**
- **we need content readability by humans and machines**
- **we need shared taxonomies, vocabularies, and understanding of content**
- **a game-changer would be to have an online repository or wallet of credentials on the blockchain, not just hashes of the credential stored on the blockchain.”**



Lluís Alfons Ariño Martin

Universitat Rovira i Virgili, Tarragona,
IT Director

A European Infrastructure for Technology Collaboration

[Watch the
presentation](#)

Mr Ariño Martin entitled his talk “Fueling the digital economy of the empowered citizens”. He provided insights from the Credentials and Diplomas Use Case that DG Connect is developing with the Design Authority Group of the European Blockchain Partnership.

He started with an analysis of the first, second, third, and fourth industrial revolution with regard to four questions:

- Which are the disruptors?
- What fuels the economy?
- How is the level of empowerment of people?
- Which is the mode transport for information and goods?

He then focused on knowledge as the disruptor of the fourth industrial revolution. Information and data fuel the economy. He cited Klaus Schwab, (World Economic Forum) with the words “This Fourth Industrial Revolution is fundamentally different.

It is characterized by a range of new technologies that are fusing the physical, digital and biological worlds, impacting all disciplines, economies and industries, and even challenging ideas about what it means to be human.”

Technology not only changes how things are being done, but it also changes the people themselves. Universities provide their education services to a wide age range, from baby boomers to generation Z. Generation Z highlights the need to meet the customers, their lifestyle, their way of relating, the channels through which they want to relate, etc. To them, face-to-face is no longer relevant, and multichannel is a reality. The process of when and where is at the mercy of the user.

The European Union has started to work on a European Blockchain Service Infrastructure (EBSI). The EBSI will be the new high speed highway for the Digital economy. It will bring trust, time savings and disintermediation. The age of the digitally empowered citizen will bring self-sovereign identity through anonymization, citizen ownership and control of their data. The data will be owned by the citizens, not by the institutions.

- **“Verifiable Digital Credentials will be the “containers” for the credentials. They will fundamentally change the education sector, just like the containers did for the shipping sector in the early 1960s.**
- **Most of us will be moving to a more just-in-time skilled education.**
- **Stacking credentials will be the norm. This will enable us to implement personalized learning pathways.**
- **The key to the success of verifiable digital credentials is the standardization of data.”**





John Domingue

Director of the Knowledge Media Institute at The Open University

Artificial intelligence, Blockchain & Analytics

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Mr Domingue offered an insight into the many projects and concepts that the Open University is working on. The Open University UK has more than 170,000 formal students, and is the founder of FutureLearn, the fifth-biggest MOOC company in the world with 9 million learners and over 175 university partners globally.

Self-Sovereign Identities

Currently, our online identity is mainly due to our employer, or a large internet company, or a place where we study. It is not our own. With blockchain, it is possible to create a self-sovereign identity, where your digital identity is really yours. This is important, because with lifelong learning and flexible learning pathways, where are you going to store your credentials? It can't be your employer, because you might change jobs, it can't be your university, because you will learn in many places. Decentralised Verifiable Claims involve the issuer signing a claim and issuing it to the owner, who then countersigns the claim, and then presents it to a verifier, who verifies the signature.

Solid

The idea behind Solid is this: you keep your data yourself. This is crucial because you want to be in control of your lifelong learning records. The Knowledge Media Institute is cooperating with Tim Berners-Lee and others to create an infrastructure for managing self-sovereign claims. Solid is a system of decentralized web applications to store personal data. This could be photographs, your personal agenda, your contact list, digital credentials, or something else. You keep the records yourself and then people interact with them.

The Knowledge Graph

It is possible to create a knowledge graph for students, so the machine knows the learning history and what the student is interested in. This can be used for learning analytics, job matching and similar services that support students in their learning.

Learning Analytics

The Open University has built a Learning Analytics tool that can predict the current student's success on the basis of course completion data from the previous cohorts of students. It achieves a 95% prediction accuracy. The future will be in lifelong blockchain analysis. The student has a data trail throughout their life: learning, studying, working, lifelong learning, and so on. You can predict careers based on the data of that person.

AI Career Coach

In one project, the Institute of Coding is creating an AI career coach. It will offer career advice for (prospective) students, based on course data, student enrolment data, alumni data, labour market data, data on outcomes of qualifications, social media data (LinkedIn and Facebook). It aims for an understanding of study and career trajectories, and their connections, supporting students in their decisions, making the university's offering more visible and making the education sector more transparent.

“Universities will become decentralized. The Open University has separated the creation of learning materials from the delivery of learning materials. It is creating new accreditation standards to turn learning achievements into open badges on the blockchain.

Artificial Intelligence might be replacing whole training departments or even components of universities. With smart contracts, the governance structure of the blockchain can become the governance structure of an organization, and there are people doing this already, for example in Estonia. The crucial area will be in the space between learners, educators and employers.”



Urban Oswald

0xcert

Blockchain for Micro-Credentials

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Mr Oswald gave the audience an introduction into the characteristics of non-fungible tokens on the blockchain and their usability for education credentials. 0xcert has developed an open-source environment for non-fungible tokens based on the ERC 721 standard on top of Ethereum, a public permissionless blockchain. The 0xcert technology consists of the framework, a verifier and an API. The digital credentialing platform credentify (<https://credentify.eu/>) is one of the possible applications of this technology stack. It was developed by 0xcert in cooperation with the MicroHE project. The credentify platform allows education providers to issue full credentials on the blockchain as non-fungible tokens based on ERC 721.

Mr Oswald then explained two key concepts behind 0xcert's approach:

Permissioned vs. permissionless

To use a permissioned blockchain, it is necessary to set up or join a consortium of different stakeholders which have permissions to read and write on that blockchain. This is very different conceptually and practically from a public blockchain. Large network effects can only be achieved in a permissionless public blockchain. Therefore, the future is in permissionless public blockchains.

Blockchain hash vs. non-fungible tokens (NFT)

The early concepts for blockchain-secured digital credentials essentially created a hash of the credential and stored that hash in a public blockchain. What can be achieved with such an approach is a time-stamped, tamper-proof credential. It is not necessary to use blockchain technology for that, this could just as well be done with digital certificates with a Public Key Infrastructure. Whereas with non-fungible tokens, you get a unique asset and true digital ownership. Think of it as the digital version of your driver's license.

“Key success factors for digital verifiable academic credentials are:

Scalability

- **Driving down network costs**
- **Readiness for use cases that require high throughput**

User Experience

- **Better developer tools**
- **End-user dapps that resemble apps**

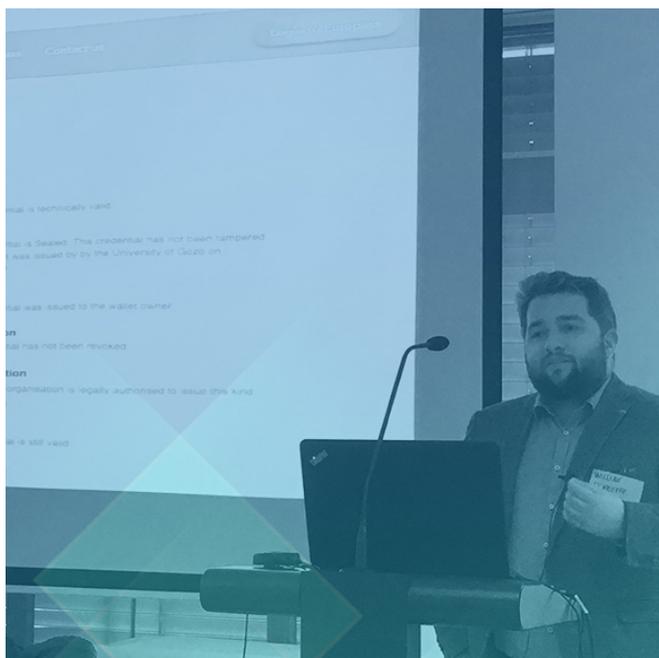
Decentralisation as a service

- **Similar to common web services**
- **APIs, tools, dapps,...**



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**Micro-
Credentials
in the Future
European Policy
Landscape**



William O'Keeffe

DG Employment European
Commission

Micro-Credentials for EU Skills and Employment Policies

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presentation](#)

Mr O'Keeffe talked about the New Europass that is being developed by the Skills and Qualifications unit in DG Employment. Europass has 36 participating countries. It is important to keep in mind that education and training as well as employment and skills development are to a large part national competencies. Europass has the aim of supporting the communication of skills and qualifications in the EU in a consistent and understandable way. It is the European tool to manage your skills and qualifications, and plan your learning and career. It is available in 29 languages. The aim is to enable mobility around the EU, as well as mobility within countries. Lack of understanding of skills and qualifications from other education systems is still one of the main barriers to recognition of qualifications from other countries, and consequently, to access to the labour market. The first phase of New Europass will be launched in April 2020.

E-Portfolio

The E-Portfolio will be a secure online space, owned and controlled by the individual users, where they can document and manage all their education and training, skills and experiences. They will have a wallet for their digital credentials and for the supporting evidence (diplomas, reference letters, etc.). The E-Portfolio tool will also contain a language self-assessment tool, and there are plans for a self-assessment tool for digital skills as well. It will be complemented by a CV editor and a cover letter editor. Additionally, it will contain a database of qualifications in the EU and a database of learning opportunities, information on guidance and recognition services, and it will inform about trends in the labour market.



The Europass Digital Credentials Infrastructure (EDCI) is putting into place standards, services and software to enable the issuing of tamper-proof digital learning credentials. It is currently in pilot testing in 16 countries with national qualifications in national qualification frameworks. The data model is scalable to allow not only for qualifications, but also for smaller units of learning such as micro-credentials and records of experience. The owner of the qualification, the awarding body, the quality assurance, the validation of the qualification can all be checked and verified instantly through the digital credential.

“Europass has moved from offering five document templates in 2004 to offering a framework of online tools and technical and legal standards for interoperability.

The New Europass platform will have two elements:

- **the E-Portfolio, and**
- **Europass Digital Credentials Infrastructure”**



Joao Bacelar

European University Foundation

Enabling Collaboration between Universities for Digital Mobility

[Watch the presentation](#)

“Imagine taking courses from four different universities during a three-year programme, some of them conducted online, without any problems of having those courses recognized towards your degree.”

Mr Bacelar found this visionary statement online. It seemed not too far-fetched from today’s reality, especially in the age of the European Universities Initiative, but still Mr Bacelar argued that most universities and accreditation agencies today would reject such a radical flexibilisation of learning pathways, and with good reason.

He argued that flexible learning pathways and micro-credentials are not very high up on the policy agenda, despite the many projects and initiatives on related topics. The main challenges he identified were on trust and credibility in micro-credentials. Consequently, he asked: How can we bring micro-credentials to the agenda?

He then drew the audience’s attention to two opportunities for micro-credentials:

1. The European Digital Education Action Plan aims, among other things, to create an app for higher education digital learning. In this app, short learning programs and MOOCs will play an essential role. It will build an index of learning opportunities that is as diverse as possible.
2. In international student mobility, the most important learning experiences are often not those captured by ECTS. Micro-credentials can give visibility to such intercultural and informal soft skills learning experiences .

“Student mobility presents a powerful use case for micro-credentialing. Research has shown that in many cases the most important learning experiences in student mobility are not those captured by ECTS. Micro-credentials can be used to make intercultural and informal soft skills learning experiences visible.”



Rolf Reinhardt

LinkedIn Learning

Micro-credentials' contribution to the future

[Watch the presentation](#)

Mr Reinhardt, who works in the LinkedIn learning department, offered to collaborate with researchers and policy-makers. He gave insights into the possibilities that already exist at LinkedIn and into the foreseeable developments in the future.

The LinkedIn membership proposition is that it can advance the career of its members because it is helping them to build meaningful relationships, stay well informed and get the right job. LinkedIn is based on member data that can be accurate – or not. What makes the data powerful is its sheer size. LinkedIn has 645 million members and estimates the total membership potential at around 3,5 billion people. 50% of LinkedIn members log in at least once a month. The company sees itself as a broker between individuals and jobs. A LinkedIn profile already contains credential information. When applying for a job through LinkedIn, the member also sees which credentials and qualifications other applicants have. LinkedIn Learning can help individuals to close the skills gap and to get their competencies endorsed.

One of the biggest challenges with user-generated profiles is verification. One current project is on skills assessment through multiple-choice tests. These are done without proctoring, so that the uncertainty about who actually took the test still exists.

LinkedIn is already using data analysis and AI to draw conclusions and come up with recommendations for learners, as well as for organisations. Employers can analyse which are the fastest growing skills in their organization, in which locations and occupations, where they lose talent, and from where they get their talent.

“Based on an analysis of the fastest growing skills and the skills most in demand by employers, LinkedIn Learning is developing new curricula at a rate of 85 new courses per week, which are available in seven languages.”



Zeynep Varoglu

Programme Specialist, ICT in Education Knowledge Societies Division Communication and Information Sector, UNESCO

Open Access through Unbundling

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Ms Varoglu pointed out that new recruitment costs employers more than re-training existing staff, and that OERs could be ideally used for such skills development processes. In reality, though, there are still many challenges that prevent the widespread use of OERs.

UNESCO has identified five key areas of action for mainstreaming OERs

1. Building capacity to create, access, use, adapt and redistribute OERs
2. Ensuring inclusive and equitable access to quality OERs
3. Developing sustainability models
4. Developing supportive policy
5. Facilitating international cooperation

For micro-credentials to realise their full potential, the following challenges have to be overcome:

- Quality
- Accessibility
- Cost [time & money]
- Recognition / valorization of micro-credentials v.v. traditional credentials

The following opportunities are associated with micro-credentials:

- Rapid pace of technological developments resulting in changes to the workplace
- The need for agility and flexibility in education
- Traditional methods of learning not fast enough to be fit for purpose
- Acceptance that lifelong learning is crucial for survival in the workplace
- Micro-credentials open up new possibilities for self realization (and potential job change)

“In today’s world, it is essential to share information and knowledge. Open Educational Resources do that.”

OERs have the potential to unbundle teaching and learning resources – they allow for the agile creation of education materials, and an economic and legal means to share this knowledge freely.

However, a lot of people don’t know how to find OERs, use them, adapt or redistribute them.”

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**Impacts
of Micro-
Credentials on
Institutional
Processes**



Piet Henderikx

Senior Executive Advisor at EADTU

Short-Learning Programmes of Common Microcredential Framework

[Watch the presentation](#)

Mr Henderikx presented ongoing work from two projects in which EADTU is collaborating with open universities and European MOOC platforms:

- [e-SLP](#): European Short Learning Programmes for continuous professional development and lifelong learning
- [EMC](#): The European MOOC Consortium

The aim of EMC is to increase awareness and use of digital education and MOOCs within universities, to make MOOCs a widely considered option for employers and workers, and to collaboratively build and conduct a research agenda on MOOCs in Europe.

The EMC founding partners have voluntarily agreed to a shared definition of a microcredential in order to lay the foundations for a new qualification to address the needs of employers and learners looking for smaller units of study that develop relevant skills.

It enables courses to be recognised towards formal qualifications and to be stackable across different higher education systems in Europe and beyond. The EMC hopes to see this framework used more widely by European universities and agencies to facilitate collaborations.

The members of the European MOOC Consortium have agreed on a definition for the Common Microcredential Framework (CMF):

- Have a total Workload (or study time) of no less than 100 hours and no more than 150 hours
- Be levelled at Level 5/6 or Level 8 in the European Qualification Framework or the equivalent levels in the University's National Qualification Framework



- Provides a summative assessment that enables the award of an academic credit, either directly following successful completion of the course or via Recognition of Prior Learning upon enrolment as a student on the University's course of study
- Operates a reliable method of ID verification at the point of assessment
- Provides a transcript that sets out the learning outcomes for a course, total study hours required, EQF level and number of credit points earned

“There is major variation within credentials and between them. Employers need a common standard to support lifelong learning. The opportunity for higher education institutions to compete against training providers and commercial MOOC platforms is to focus on their traditional strengths:

- **accredited**
- **rigorously assessed**
- **standardised**
- **transferable**
- **stackable**
- **pathways into other qualifications”**



Denes Zarka

Director of MTI at Budapest University of Technology and Economics

Short-Learning Programmes and their Impacts on the quality system of microcredentials

[Watch the presentation](#)

Mr Zarka presented results from an analysis of short learning programmes and micro-credentials. The analysis was done as part of the OE Pass project, and it focused on the quality of the credential itself, not the quality of the course.

Credentials were analysed with respect to the data content of credential, the security of the credential, the usefulness for recognition purposes and stackability, the revocability of credential, and the ownership of credential. The analysis is based on a collection of 125 open learning credentials from various countries and providers. The results were used to create a typology and a classification system for digital credentials. The following quality indicators were defined.

Content Indicators:

- Learning Outcomes
- Quality of learning quality assessment system
- Level of learning
- Workload of learning
- Identity of learner
- Identity of HE institution

Statement Indicators:

- Distinct
- Authentic
- Accessible
- Exchangeable
- Portable

Medium Indicators:

- Distinct
- Authentic
- Accessible
- Exchangeable
- Portable

“The novel approach in the OE Pass project was to look not only for indicators that would help to judge the quality of the learning experience, but to define indicators for the quality of the credential itself: the statement and medium indicators. In a world of digital credentials, the quality of the credential itself matters: it has to be trustworthy and reliable as well as informative.”



Henri Pirkkalainen

MicroHE Project & Tampere University

Institutional Openness to Micro-Credentialing

[Watch the presentation](#)

Mr Pirkkalainen provided preliminary insights from a survey that the MicroHE project conducted on short learning programme (SLP) adoption and micro-credentials in Europe.

Finding 1: Institutions Lack Understanding of SLPs and Micro-credentials

- "What would be a Short Learning Programme for us?"
- Roles and chain of command are unclear in institutions regarding SLPs

Finding 2: Common recognition mechanism enables adoption

- "...SLPs cannot be easily accredited by accreditation agencies"
- "...other institutions would not recognize the credentials"

Finding 3: Adequate Resource Allocation Enables SLP adoption

- Optimal resource allocation is a managerial issue and, based on our findings, can increase SLP adoption. However, there are major differences observed even within faculties about the awareness levels on SLPs
- Institutional business models for SLPs are still missing, and in some cases there are no plans to develop them

Finding 4: SLP Enabled Profitability Coincides with SLP adoption

- Institutions that have a high intention to adopt SLPs believe that SLPs are a way to increase the profitability of the institution, e.g. by enrolling more students

Finding 5: Flexibility, personalization and recognition are critical when using SLPs to respond to the demands of the labour market

- Institutions in favor of using SLPs as means to respond to the demands of the labour market emphasize the importance of flexibility, personalization and recognition

“Common recognition mechanisms and standards are needed for micro-credentials. For institutions to offer micro-credentials, resource allocation is critical. This requires a change of mindset in practices. The higher education business logic needs an update. Institutions need to realize this to boost micro-credential adoption. Institutions cherish the goal of using micro-credentials as an instrument to improve employability, they just might not know how to do so.”



Sandra Kučina Softić

Assistant Director for Education and User Support, University Computing Centre University of Zagreb SRCE, President of Eden

Institutional Strategies for Micro-Credentialing

[Watch the presentation](#)

Ms Kučina Softić shared the University of Zagreb's experiences with digital badges. The university provides digital badges to its students both for formal education and for extra-curricular activities to make them more visible. It also awards teachers with digital badges to show their digital skills. Badges bring increased motivation for learning, and they enable individualized learner pathways. She sees an additional benefit in the fact that the digital badge requires the learning outcome and assessment to be clearly specified, which can help to improve the quality of the course itself.

Ms Kučina Softić said that digital badges are a valuable component of the University of Zagreb's strategy. They raise awareness for new technologies and their possibilities to enhance the quality of the educational process. As a relatively new tool, their value and efficacy in educational setting is still being explored. The promise is that non-formal learning can count for formal education. She highlighted the importance of a strategic and systematic approach when implementing digital badges on an institutional level.

“Today, digital badges are a standard component for all online courses at the University of Zagreb Computing Centre.”



Ildiko Mazar

Knowledge Innovation Centre

Supporting Lifelong Pathways through a Credential Infrastructure

[Watch the presentation](#)

Ms Mazar gave a preview of the Europass Digital Credentials Infrastructure (EDCI), one of the components of the New Europass. Driven by European policy, Action 3 of the Digital Education Action Plan aims to provide a framework that is fully aligned with EQF and ESCO.

The European Digital Credentials Infrastructure is currently in the pilot-testing phase and will be released in April 2020. It will be compatible with national, regional and institutional practices and be based on open standards and technology that is free, secure, transparent and scalable. The citizen will be the owner of his or her digitally-signed credentials. EDCI will enable stackability and portability and be based on achievements, i.e. learning outcomes, skills and entitlements. The aim is to facilitate mobility, both in skills and career development. It will connect learning providers, lifelong learners and employers. Ms Mazar also offered an outlook to the next 5-10 years:

credentials (including credits earned during study exchange) will be issued by multiple institutions and organisations

- Building blocks of traditional qualifications will include achievements from non-formal and informal learning
- CVs will be replaced by smart e-Portfolios
- Big data will become available and accessible to better inform the match between skills supply and demand and to help steer career development and reskilling

“As lifelong learners/workers become more mobile, they will take greater ownership of planning and documenting their continuous professional development by requesting micro-credentials and attestations proactively.”

- Qualifications that are built from micro-



01
02
03
04
05

**Impact
of Micro-
credentials on
new learner
paradigms**



Elena Caldirola

Head of Innovation in Didactics and Digital Communication Unit, University of Pavia

Didactical Innovation through Micro-Credentials

[Watch the presentation](#)

Ms Caldirola drew the audience's attention to the importance of creating future learning spaces. She cited the Educause Horizon 2019 report on Higher Education, which classified the challenges impending higher education technology adoption into three categories:

“Solvable (Those That We Understand and Know How to Solve)

- Improving Digital Fluency
- Increasing Demand for Digital Learning Experience and Instructional Design Expertise

Difficult (Those That We Understand but for Which Solutions Are Elusive)

- The Evolving Roles of Faculty with Ed Tech Strategies
- Achievement Gap

Wicked (Those That Are Complex to Even Define, Much Less Address)

- Advancing Digital Equity
- Rethinking the Practice of Teaching”

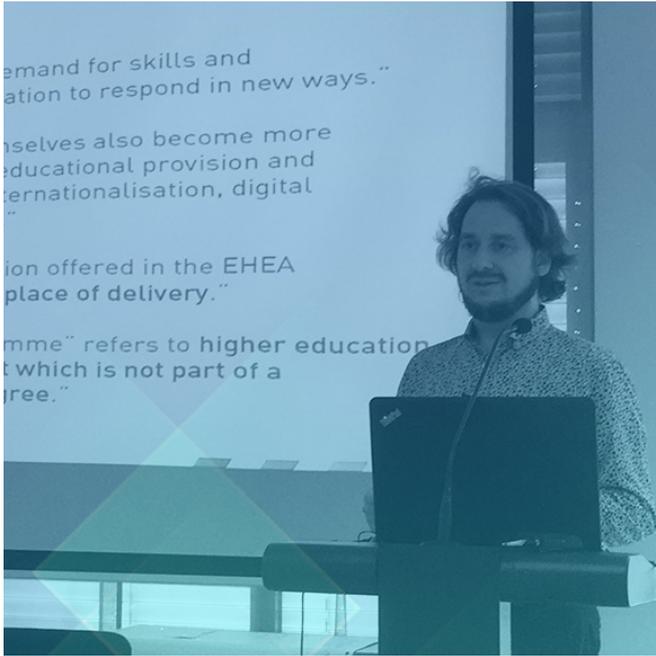
With the trend for digital, modularized and disaggregated degrees, institutions will have to rethink and reinvent how they work. She strongly

believes that we will have to create future learning spaces that enable new ways of learning and new digital skills to learn (cited from the European Commission Joint Research Centre | Institute for Prospective Technological Studies (IPTS)):

- Learning Spaces are Personal Digital Spaces
- Learning Spaces are Connecting and Social Spaces
- Learning Spaces are Trusted Spaces
- Learning Spaces are Creative/Flexible Spaces
- Learning Spaces are Certified Spaces
- Learning Spaces are Motivating and Pleasant Spaces
- Learning Spaces are Controllable Spaces
- Learning Spaces as Knowledge Management Systems
- Learning Spaces are Inclusive Spaces

“Learning spaces are important. In learning-intensive societies, they are flexible social spaces for collaborative learning.”

In my university, we designed learning spaces that enable new forms of interaction between learners and instructors.”



Colin Tück

European Quality Assurance Register

Quality Assuring Micro-Credentials: A Student Centred Approach

[Watch the presentation](#)

Mr Tück's presentation focused on the question of how micro-credentials can be quality-assured and accredited within the European higher education framework according to the European Standards and Guidelines (ESG). He came to the conclusion that:

- ESG are clearly student-centred
- ESG clearly cover micro-credentials
- There is nothing in the ESG that prevents them from being used for micro-credentials

He backed this up with quotes from the ESG: "At the same time, an increasing demand for skills and competences requires higher education to respond in new ways."

"Higher education institutions themselves also become more diverse in their missions, mode of educational provision and cooperation, including growth of internationalisation, digital learning and new forms of delivery."

"The ESG apply to all higher education offered in the EHEA regardless of the mode of study or place of delivery."

"In this document the term "programme" refers to higher education in its broadest sense, including that which is not part of a programme leading to a formal degree."

"Responding to diversity and growing expectations for higher education requires a fundamental shift in its provision; it requires a more student-centred approach to learning and teaching, embracing flexible learning paths and recognising competencies gained outside formal curricula. Higher education institutions themselves also become more diverse in their missions, mode of educational provision and cooperation, including growth of internationalisation, digital learning and new forms of delivery."

"There is nothing in the ESG that prevents them from being used for micro-credentials. Is there a need for a "European Approach" towards the accreditation of micro-credentials? Yes, and the details should be defined by the higher education institutions and by the quality accreditation agencies."



Maria Sticchi Damiani

Lead Author of the ECTS Users Guide

Stackability of Micro-Credentials for Student-Centred Learning

[Watch the presentation](#)

Ms Sticchi Damiani encouraged the audience to integrate micro-credentials into the European quality standards for higher education. She shared ideas on how to allocate ECTS credits to micro-credentials and how to implement stackability.

Micro-credentials, to be awarded after the completion of short courses (or modules) and proper assessment of the acquired competences, are intended to provide flexible opportunities for certified learning in response to evolving professional and societal needs.

The stackability of micro-credentials - in a student-centred perspective of continuous learning - would benefit from their integration into European HE systems and institutions through full alignment to the main structures and principles of the European Higher Education Area (EHEA). European Qualifications Frameworks should acknowledge the existence and specific features of microcredentials.

When allocating ECTS credits to the short courses leading to micro-credentials, the learning outcomes of the course would be defined and

clearly described, and the learning time required to achieve them would be estimated. The ECTS credits associated with micro-credentials would be a basic element for stacking them in a transparent way on the basis of the volume of learning. They would also facilitate the national and international recognition of micro-credentials, as independent modules or as part of full qualifications. 3 and 5 credits seem to be ideal sizes for microcredentials; the number of learning hours per credit would be based on those formally stipulated in most EHEA systems, ranging from 25 to 30 hours per credit (i.e., a 5-credit course would involve approximately 125/150 learning hours). To this purpose, the ECTS Guide already provides indications on the use of credits for stand-alone modules. Regardless of the mode of learning adopted in short courses/modules, learning/teaching and assessment activities would be constructively aligned, in order to enable students to achieve the defined learning outcomes within the estimated learning time.



Students would be empowered to make learning choices and actively participate in the learning process. The stacking of micro-credentials would be facilitated by compliance with the same quality assurance framework. So would their recognition as independent modules or part of full qualifications, both at the national and international level.

Monitoring and evaluation of the short courses should take their specific features into consideration and follow simple and rapid procedures. To this purpose, a new section of the European Standards and Guidelines for QA might be envisaged.

“Defining the level of micro-credentials with reference to National and European Qualifications Frameworks would give micro-credentials a formal status in higher education systems and position them clearly in higher education institutions’ educational offer, as well as provide an essential indication for stacking them consistently according to level and for appropriate national and international recognition, as independent modules or part of a full qualification.”



Yasmine Wauthier

Accreditation Organisation of the Netherlands and Flanders (NVAO)

Recognising Micro-Credentials

[Watch the presentation](#)

Ms Wauthier presented results from the e-VALUATE project. The e-Valuate consortium is composed of representatives from the ENIC-NARIC network. The e-VALUATE project aims to contribute to more effective policies for the recognition of new forms of online learning in the European Higher Education Area (EHEA).

Academic recognition is the recognition of (foreign) qualifications

- for admission to a study programme offered by an accredited higher education institution.
- for exemption from parts of a study programme offered by an accredited higher education institution (max. 50%).

To be able to make an informed recognition decision within reasonable time limits, the project proposes a procedure based on seven criteria:

1. Quality of the course
2. Verification of the certificate
3. Level of the course
4. Learning outcomes
5. Workload
6. The way study results are tested
7. Identification of the participant

“NVAO, the accreditation organization for the Netherlands and Flanders, does not yet offer accreditation of micro-credentials, but has plans to do so in the future.”



Jasmina Policnik

Skupnost VSS

Towards Flexible Work-Study Experiences

[Watch the presentation](#)

Ms Policnik reflected on how flexible work-study experiences could benefit from modularization and micro-credentialing. Skupnost VSS represents colleges on EQF level 5 in Slovenia. 40% of their study curricula is in company training. Therefore, work-based learning is important to them.

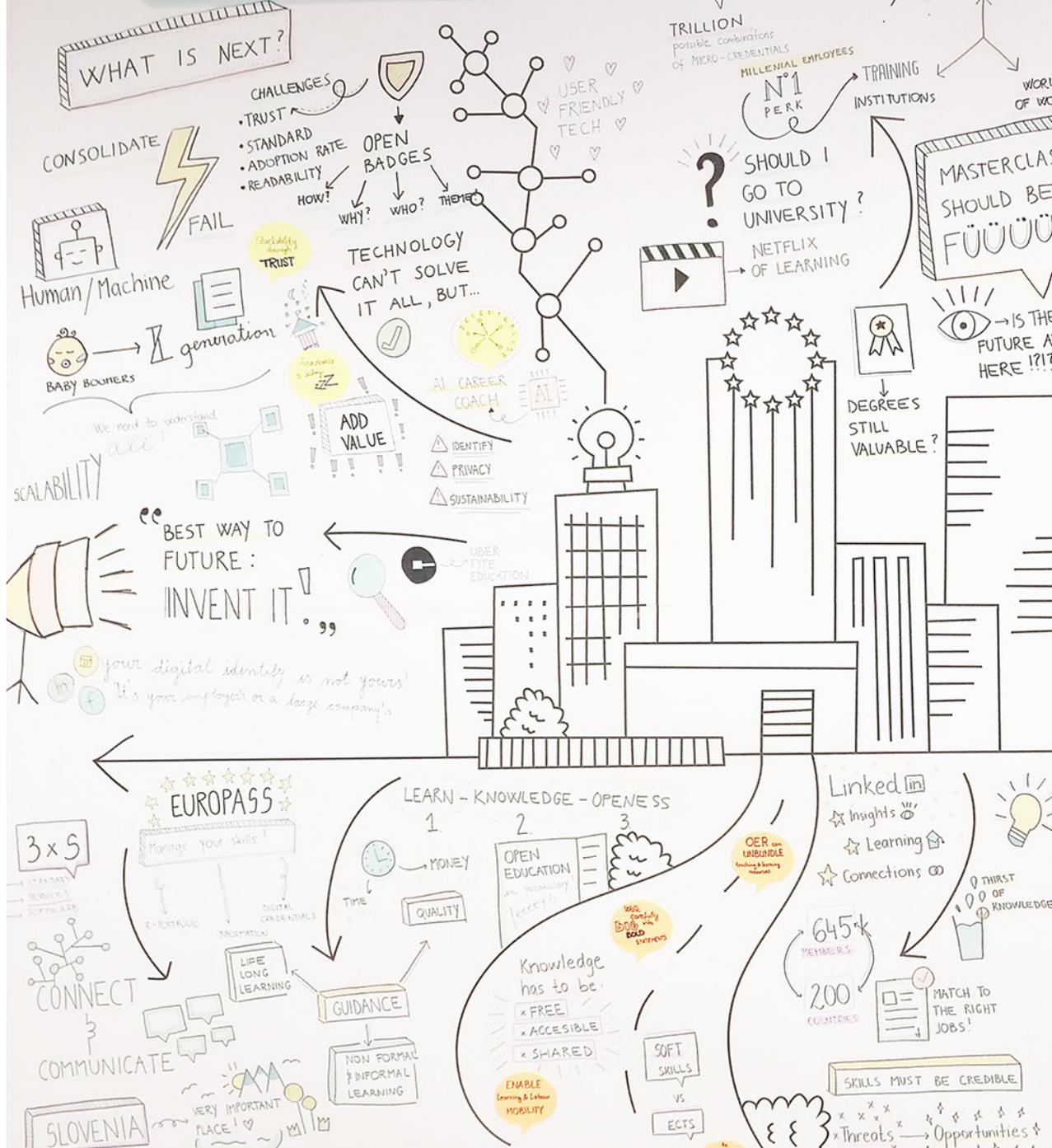
As an association, Skupnost VSS already provides its member colleges with a digital tool for the monitoring of the apprenticeship phases. This tool is called ApprenticeTrack. Skupnost VSS is currently working on providing micro-credentials within this tool and on addressing the following challenges:

- interoperability
- legislation and policy awareness
- recognition in higher education

“We get more and more proposals from the employer’s and student’s side that they want to follow just a part of the curriculum. To do so, the colleges are thinking about providing them with a micro-credential instead of the full degree.”



TECHNOLOGY POWERING THE FUTURE OF MICRO-CREDENTIALS

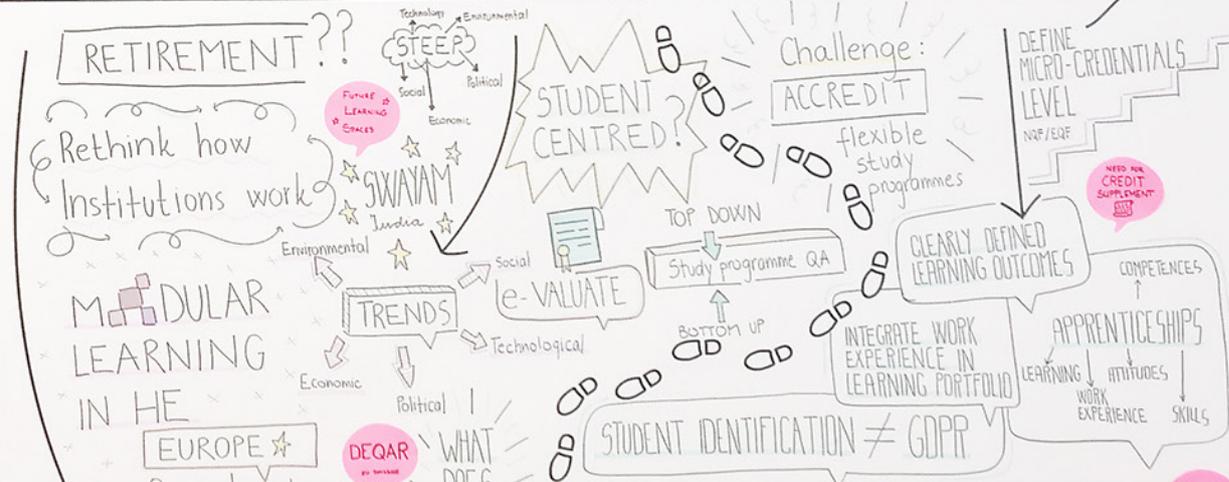
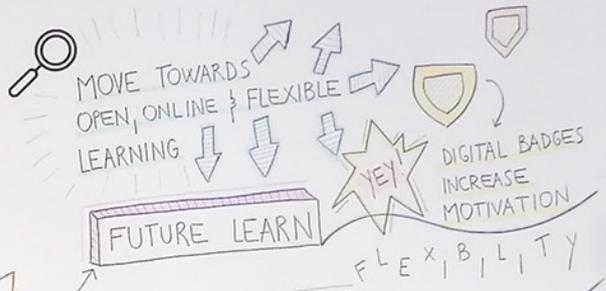


MICRO-CREDENTIALS IN THE FUTURE EUROPEAN POLICY LANDSCAPE



ONLY THE UNIVERSITY SECTOR CAN GET AWAY WITH SAYING "WE ARE ONE OF THE BESTS, WE HAVE BEEN DOING THINGS THE SAME WAY FOR OVER 500 YEARS."

IMPACTS OF MICRO-CREDENTIALS ON INSTITUTIONAL PROCESSES



IMPACT OF MICRO-CREDENTIALS ON NEW LEARNER PARADIGMS



“We should consider adding a new section on micro-credentials to the European Standards and Guidelines, just like a new section was added in Paris for joint degrees. Why not think about half a page on micro-credentials on the basis of the standards. We need to add a supplement to the micro-credential, which would indicate the learning outcomes, the level, the number of credits, the quality assurance, and the teaching and learning approaches, then we would be fully aligned with the European Higher Education Area. This common standard would facilitate micro-credential adoption.”

Maria Sticchi Damiani

Lead Author of the ECTS Users Guide